1. MEDZHIBER, A.M.
2. USSR (600)
4. Electric Locomotives
7. Use of electric locomotives at communist construction projects, Elek.sta. 24 no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

L 36730-65 EPF(c)/EPF(n)-2/EPR/EWG(j)/EPA(s)-2/EWA(h)/EWP(j)/EWT(l)/EWT(m)/EWG(m)/EWP(b)/T/EWA(l)/EWP(t) Pc-4/Pr-4/Ps-4/Pu-4/Peb RM/DJ/GS

ACCESSION NR: AT5007898 S/0000/64/000/000/0047/0055

AUTHOR: Vol'f-Epshteyn, A. B.; Karavayev, G. N.; Krichko, A. N.; Medzhibovskiy, B. A.

62
B+1

TITLE: An organic heat-transfer agent for nuclear reactors based on the by-products of cumene production

SOURCE: Moscow. Institut atomnoy energii. Issledovaniya po primeneniyu organicheskikh teplonositeley-zamedliteley v energeticheskikh reaktorakh (Research on the use of organic heat-transfer agents and moderators in power reactors). Moscow, Atomizdat, 1964, 47-55

TOPIC TAGS: organic reactor coolant, thermal reactor, radiation polymerization, power reactor, infrared spectroscopy, heat transfer agent, cumene production, polyalkylbenzene resin, biphenyl derivative, catalytic hydrogenation

ABSTRACT: The authors investigated the possibility of obtaining an organic heat-transfer agent whose radiation-thermal resistance would be comparable to that of monoisopropylbiphenyl from the by-products of isopropylbenzene (cumene) production. A polyalkylbenzene resin was used as the raw material. An investigation of the chemical composition of the resin revealed that up to 55% of the hydrocarbons in

Card 1/2

L 36730-65 EPF(c)/EPF(n)-2/EPR/EWG(j)/EPA(s)-2/EWA(h)/EWP(j)/EWT(l)/EWT(m)/EWG(m)/EWP(b)/T/EWA(l)/EWP(t) Pc-4/Pr-4/Ps-4/Pu-4/Peb RM/DJ/GS

ACCESSION NR: AT5007898 S/0000/64/000/000/0047/0055

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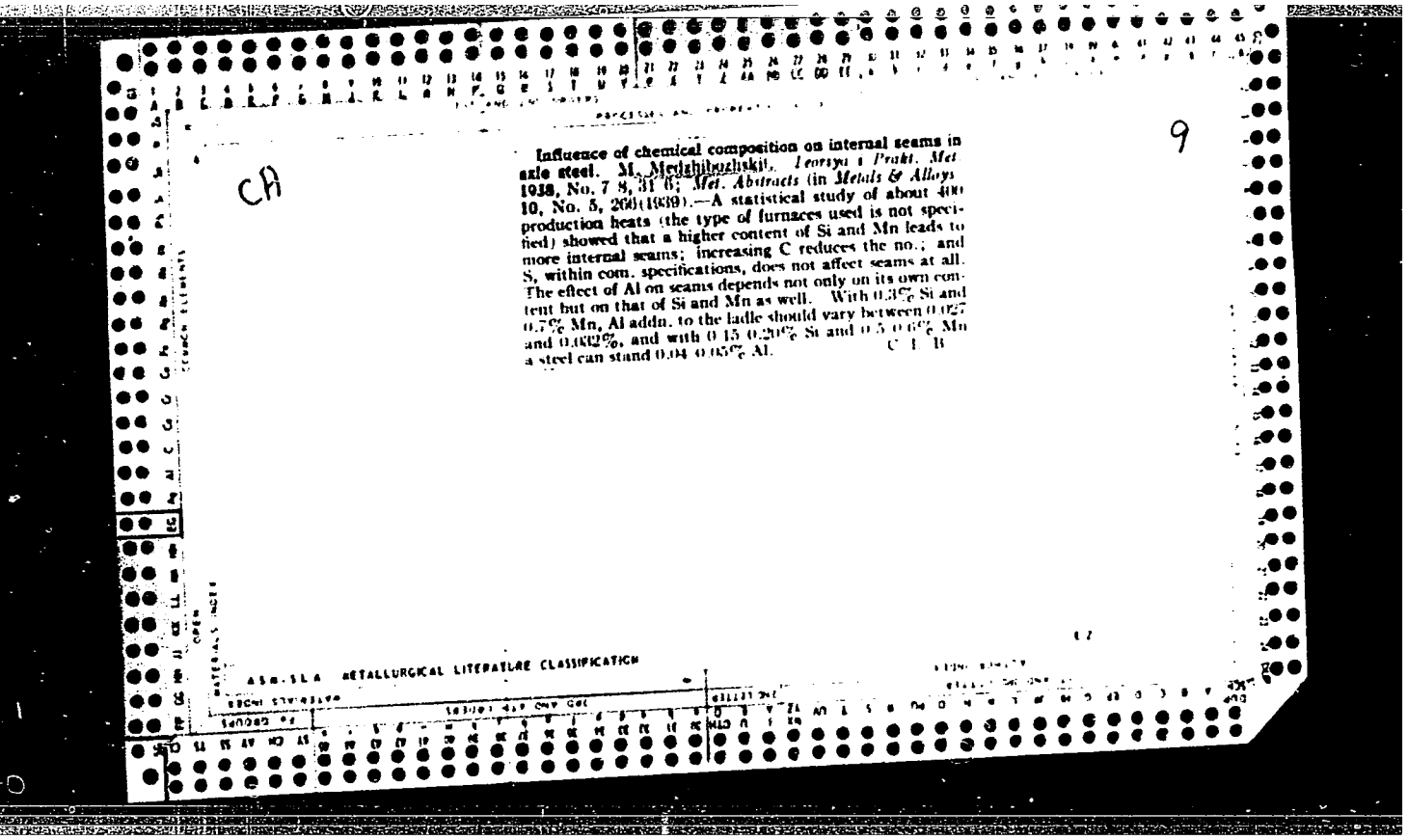
Card 1/2

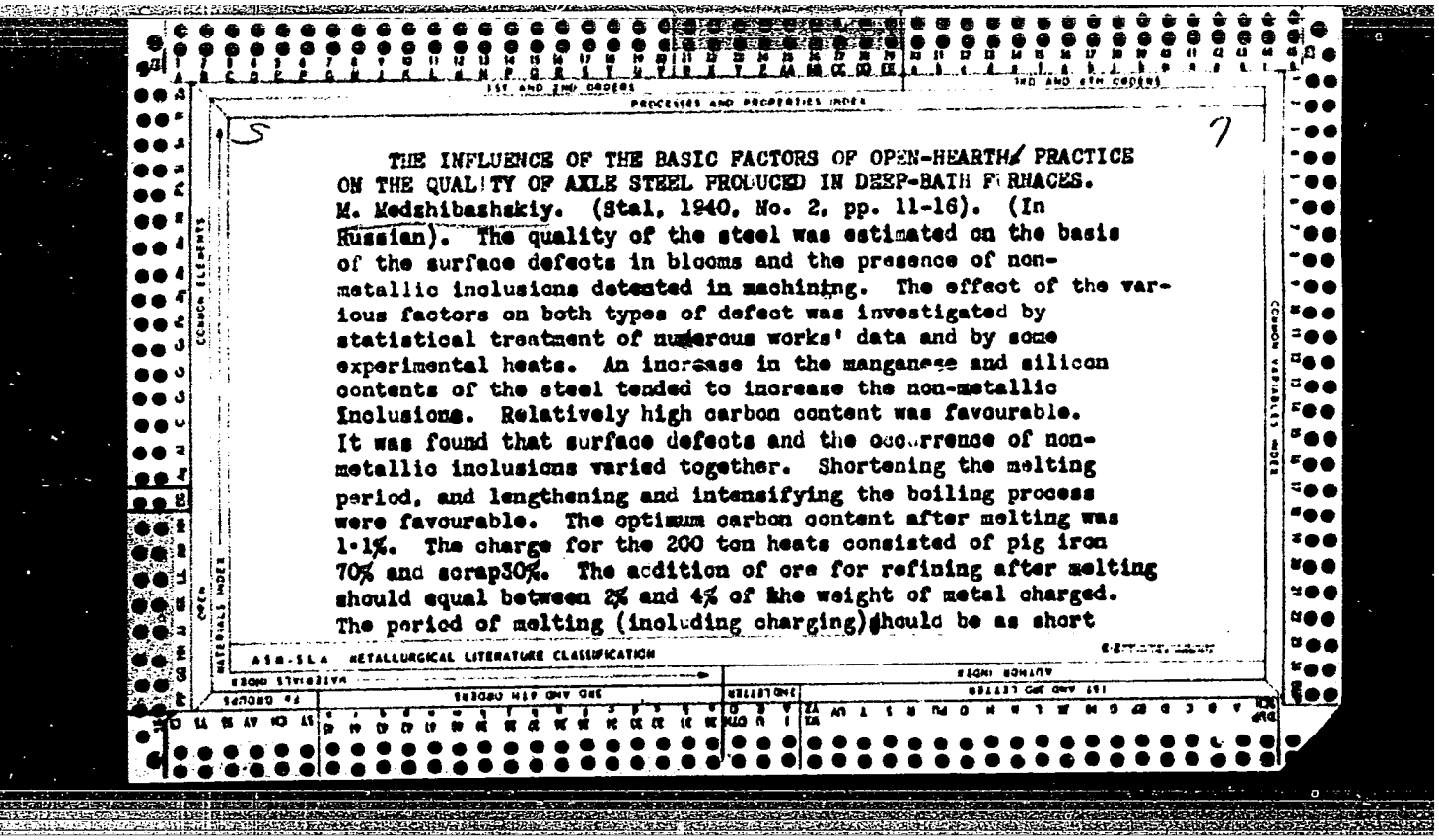


CA

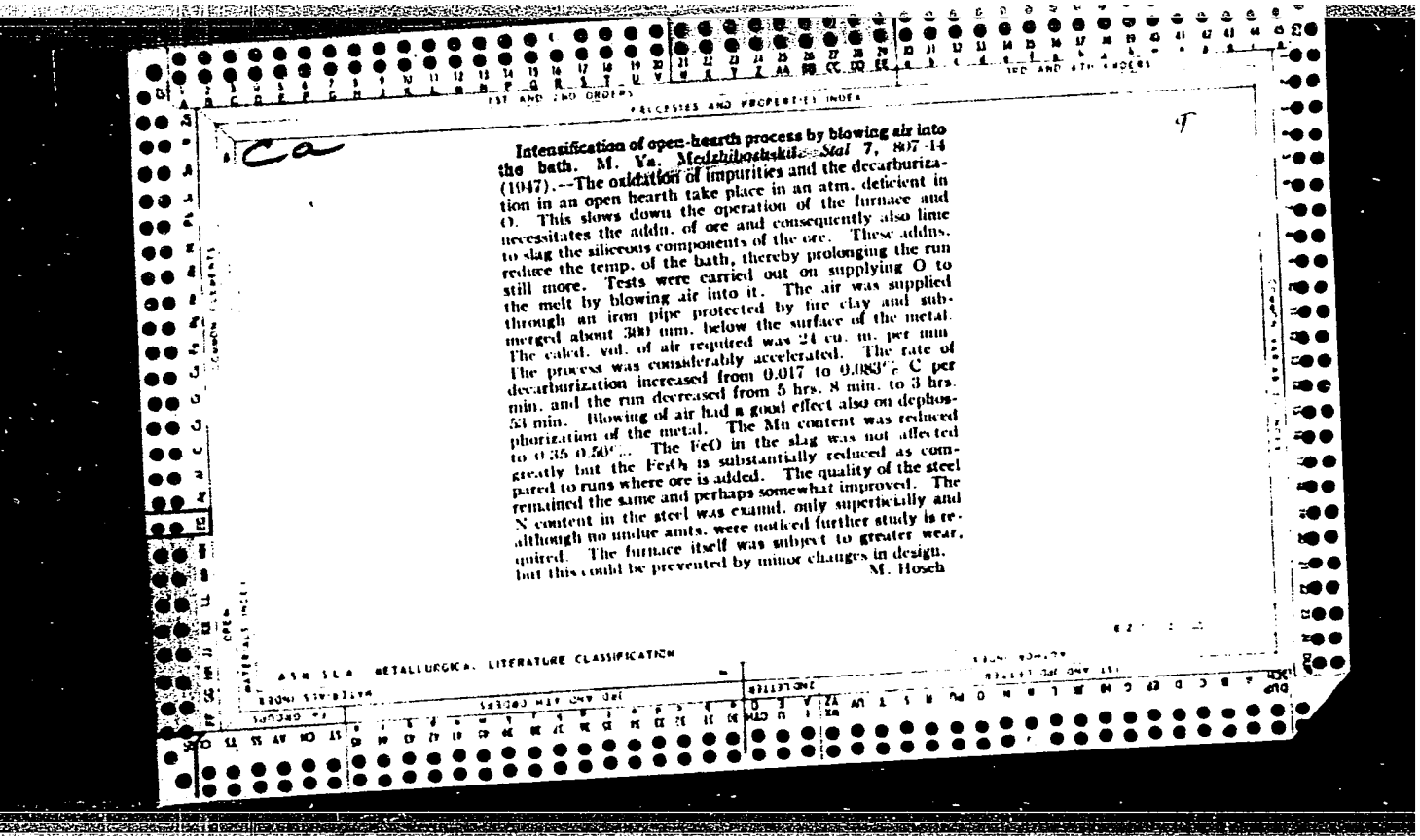
9

Influence of chemical composition on internal seams in axle steel. M. Medzhibuzhskii. *Leonya i Prakt. Met.* **1938**, No. 7-8, 31-6; *Met. Abstracts* (in *Metals & Alloys* **10**, No. 5, 260(1939)).—A statistical study of about 400 production heats (the type of furnaces used is not specified) showed that a higher content of Si and Mn leads to more internal seams; increasing C reduces the no.; and S, within com. specifications, does not affect seams at all. The effect of Al on seams depends not only on its own content but on that of Si and Mn as well. With 0.3% Si and 0.7% Mn, Al addn. to the ladle should vary between 0.027 and 0.082%, and with 0.15-0.20% Si and 0.5-0.6% Mn a steel can stand 0.04-0.05% Al. C. I. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



THE INFLUENCE OF THE BASIC FACTORS OF OPEN-HEARTH PRACTICE ON THE QUALITY OF AXLE STEEL PRODUCED IN DEEP-BATH FURNACES. M. Medzhibazhskiy. (Stal, 1940, No. 2, pp. 11-16). (In Russian). The quality of the steel was estimated on the basis of the surface defects in blooms and the presence of non-metallic inclusions detected in machining. The effect of the various factors on both types of defect was investigated by statistical treatment of numerous works' data and by some experimental heats. An increase in the manganese and silicon contents of the steel tended to increase the non-metallic inclusions. Relatively high carbon content was favourable. It was found that surface defects and the occurrence of non-metallic inclusions varied together. Shortening the melting period, and lengthening and intensifying the boiling process were favourable. The optimum carbon content after melting was 1·1%. The charge for the 200 ton heats consisted of pig iron 70% and scrap30%. The addition of ore for refining after melting should equal between 2% and 4% of the weight of metal charged. The period of melting (including charging) should be as short



Ca

Intensification of open-hearth process by blowing air into the bath. M. Ya. Medzhibovskii. *Stal* 7, 807-14 (1947).--The oxidation of impurities and the decarburization in an open hearth take place in an atm. deficient in O. This slows down the operation of the furnace and necessitates the addn. of ore and consequently also lime to slag the siliceous components of the ore. These addns. reduce the temp. of the bath, thereby prolonging the run still more. Tests were carried out on supplying O to the melt by blowing air into it. The air was supplied through an iron pipe protected by fire clay and submerged about 300 mm. below the surface of the metal. The calcd. vol. of air required was 24 cu. m. per min. The process was considerably accelerated. The rate of decarburization increased from 0.017 to 0.083% C per min. and the run decreased from 5 hrs. 8 min. to 3 hrs. 53 min. Blowing of air had a good effect also on dephosphorization of the metal. The Mn content was reduced to 0.35 0.50%. The FeO in the slag was not affected greatly but the Fe_2O_3 is substantially reduced as compared to runs where ore is added. The quality of the steel remained the same and perhaps somewhat improved. The N content in the steel was exaind. only superficially and although no undue amts. were noticed further study is required. The furnace itself was subject to greater wear, but this could be prevented by minor changes in design.

M. Hoseh

LAPITSKIY, V. I.; MEDZHIBOZHSKIY, M. Ya.

Mbr., Dnepropetrovsk Metallurgical Institue, -c-1948-.

Cand. Technical Sci.

"Irregularities in the properties of slag in the vat of basic open hearth furnaces," Stal' No. 6, 1948.

MEDZHIBOZHSKIY, M. Ya.

Mbr., Dnepropetrovsk Metal Inst., -c1948-; Mbr., Dneprodzerzhinsk Metallurgical Plant, -c1948-. "A Device for Separating Slag Specimens in a Martin Furnace at Different Depths," Zavod. Lab., 14, No. 1, 1948; "An Immersion Viscosimeter for Determining the Fluidity of Open-Hearth Slag," Zavod. Lab., 14, No. 2, 1948; "Irregularieies in the Properties of Slag in the Vat of Basic Open Hearth Furnaces," Stal' No. 6, 1948.

-A

Inhomogeneity of slag composition in basic open hearths. V. I. Laputskii and M. Ya. Medzhibozhskii. *Stal* 8,
209-10(1948). The purpose of this investigation was to
study the compn. of slag at its various levels. Slag samples
were withdrawn from the furnace with a special app.
which sampled the slag simultaneously at 4 levels. At the
same time temp. readings were made at the slag surface
and metal surface, and the viscosity of the slag at the sam-
pled levels was detd. The total thickness of the slag was
100-180 mm. with a mean of 140-150 mm. The bulk of
the samples were taken before adding FeMn when the C
content was 0.15-0.25%, but addnl. samples were taken at
other periods. From bottom to top, i.e., from the metal-
slag to the slag-air interface, the Fe_2O_3 increased and the
FeO decreased successively. In the same direction the
color of the slag darkened, the fusion temp. of the slag
decreased, and the pH decreased. The difference in Fe_2O_3
content of the bottom and top levels increased with the
basicity of the slag. Contrary to the accepted view, the
rate of C oxidation increased with the CaO/SiO_2 ratio.
This is explained by the difference in Ca ferrite stability
which diminishes from top to bottom layer. The difference
in the slag compn. at various levels is essential for the re-
actions in the metal phase because only owing to the Fe
oxide gradient in the slag can O from the atm. penetrate
the metal. M. Hosch

APPROVED FOR RELEASE: 07/12/2001 CIA-RDP86-00513R001033310020-8"

MEDZHIBOZHSKIY, M. Ya.

'An Immersion Viscosimeter for Determining the Fluidity of Open-Hearth Slag,' Zavod. Labo., 14, No 2, 1948

Dnepropetrovsk Metallugical Inst., and Dneprodzerzhinsk Metallurgical Plant.

MEDZHIBOZHSKIY, Miron Yakovlevich, kandidat tekhnicheskikh nauk; SOKOLOV, I.A. inzhener; IVANOV, N.I., redaktor; SHAROPIN, V.D., redaktor; SHPAK, Ye.G., tekhnicheskiy redaktor.

[Fast method of computing open-hearth furnace charges] Uskorennyi metbod rascheta martenovskoi shikhty. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1955. 59 p. (MLRA 9:6)
(Open-hearth process)

MEDZHIBOZHSKIY, M.Ya.

Assaying technique for the determination of ferrous and ferric oxide in solidifying slag. Zav.lab. 21 no.3:289-294 '55.
(MLRA 8:6)

1. Sibirskiy metallurgicheskiy institut.
(Iron ores—Analysis) (Slag--Analysis)

6

Injection of Air into O.H. Furnace Ports. L. S. Klimasenko, M. Ya. Medzhibozhskii, [illegible], N. I. Bovin and D. Z. [illegible] Savostin. (*Stal'*, 1956, (5), 402–403). [In Russian]. Injection of compressed air into the gas ports of 380-ton O.H. furnaces at the Kuznetsk Metallurgical Combine decreased tap-to-tap time by 30–40 min and resulted in some fuel economy.—S. K.

Kuznetsk Metallurgical Combine and Siberian Metallurgical Inst.

137-58-6-11690

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 68 (USSR)

AUTHOR: Medzhibozhskiy, M.Ya.

TITLE: Employment of Blower Air to Speed Decarburization of Metal in the Scrap-and-ore Open-hearth Process (Primeneniye kompressornogo vozdukha dlya uskoreniya reaktsii obezuglerozhivaniya metalla pri martenovskom skrap-rudnom protsesse)

PERIODICAL: V sb. Primeneniye kisloroda v metallurgii. Moscow, Metallurgizdat, 1957, pp 146-159

ABSTRACT: In experimental heats using a small furnace, air blow of the metal made possible a 20% reduction in heat time and a 25% increase in output. The rate of C burn-out, V_C, was 0.05-0.010% C per min. The consumption of compressed air was 10-15 m^3/min, and the duration of the blow was 10-15 min. Compressed air blow yields the same results as O_2 blow. Experiments run for several years at the Kuznetskiy Metallurgical Kombinat (KMK) showed that heats may be considerably speeded in large-capacity furnaces as well by blowing compressed air into the bath. At an air pressure of $\geq$ 4 atm and a flow rate of 25-30 m^3/min, the V_C in 185-t heats was 0.8-1.0% C per hour.

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Employment of Blower Air (cont.)

The time required per heat was cut by 1 or 2 hours. The heat is also speeded by the acceleration of the process of slag formation. The compressed air is introduced through the roof. Minimum splash and dust results when the tuyere is immersed deep into the metal ($\geq$200 mm from the top of the slag). In experimental heats, the fuel heat consumed on the average was lower by 25 mill. kcal per heat than in standard heats. The temperature rises during the period of the blow. A table of change in temperature during the period of a blow is presented. The rise in temperature of the metal not only does not lag, but actually leads the burnout of the C. The quality of the metal is not worse, but in some respects even superior. a_k is distinctly higher than in ordinary melts. The gas contents are lower than in the usual heat. Investigation of microstructure shows that the metal from heats run with injection of oxygen into the bath is of lower oxide and sulfide rating and of finer grain than metal from standard-type heats. In experimental heats, the yield of first-quality rails was 96%.

1. Metals--Processing 2. Carbon--Reduction 3. Compressed air --Applications

S.L.

Card 2/2

SOV/137-58-10-20559

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 10, p 30 (USSR)

AUTHOR: Medzhibozhskiy, M.Ya.

TITLE: Procedure for Dephosphorization and Complete Slag Control Prior to Fusion in Large Open-hearth Furnaces Employing Artificial Stirring of the Bath (Provedeniye defosforatsii i polnoy navodki shlaka do rasplavleniya na bol'shegruznykh martenovskikh pechakh pri iskusstvennom peremeshivanii vanny)

PERIODICAL: Tr. Sibirsk. metallurg. in-ta, 1957, Nr 4, pp 69-84

ABSTRACT: Twenty experimental heats of rail steel were run in 2-runner large-capacity furnaces fueled with a mixture of coking and producer gases. It is found that scale and ore may be added prior to complete fusion of the bath without interfering with energetic melting and with acceleration of the burning-off of C and P if the amount of these additions is relatively small. 0.5-0.8% of the weight of the heat is added each time, at intervals of about 15 to 20 minutes. Lime added to the unfused bath dissolves with considerably greater difficulty. Under these conditions, a pronounced increase in melting time may be

Card 1/2

Procedure for Dephosphorization and Complete Slag Control (cont.)

prevented by the employment of artificial stirring of the bath (by an agitator or by compressed gas). Approximately 1 hour prior to complete fusion, bauxite and scale or ore are added to the bath, and the bath is then stirred with an agitator. The resultant fluid slag is carefully skimmed by means of a charging box, lime and bauxite is added, and the bath is again stirred with the agitator. Subsequent stirrings of the bath are performed after addition of Fe-Mn (at the end of the ore boil) and of the last lot of ore (at the onset of pure boil). The total duration of stirring is on the average 15 minutes per heat. In furnaces kept working constantly, the duration of the melt is reduced by 38 minutes on the average. This procedure cannot be used for furnaces operating from the cold condition. The thermal conditions and the composition of the materials were the same as in ordinary heats. The experimental heats witnessed a more rapid rise in (CaO), (FeO), and the basicity of the slag. At the end of the melt, [P] came to 0.020-0.030%. Also observed is a higher rate of C burn-off. The consumption of oxidizers, lime, and bauxite is identical with that in ordinary heats. The conditions of deoxidation and pouring in the experimental and standard heats were identical. The mechanical properties, the gas contents, and the yield of good material are approximately equal to those of the standard heats, and the content of nonmetallic inclusions is lower. 1. Steel--Production 2. Phosphorus--Separation 3. Slags--Control
Card 2/2 4. Slags--Control 5. Metals--Fusion

S.L.

SOV/137-58-7-14358

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 58 (USSR)

AUTHOR: Medzhibozhskiy, M.Ya.

TITLE: On the Oxidizing Capacity of Open-hearth Furnaces (Ob okislitel'noy sposobnosti martenovskikh pechey)

PERIODICAL: Tr. Sibirsk. metallurg. in-ta, 1957, Nr 4, pp 85-105

ABSTRACT: An examination is made of problems dealing with the intensification of the open-hearth process and methods of saving fuel. Experimental heats were run in 190 and 380-t basic open hearths. The limited oxidizing capacity (OC) of the working atmosphere was due to the low O_2 excess. It is demonstrated that it is possible to substitute Fe ore as the oxidizer of impurities in the metal (Me) by oxygen, an excess of which is created by the delivery of blower air or oxygen into the jet of flame. Oxidation of 1% C by ore (at 1500°C) reduces the temperature of the Me by 241°, whereas oxidation of a like amount of C by the oxygen of the flame raises the temperature of the Me by 104°, thereby permitting a saving of 75 million kcal of heat and considerably shortening the length of the heat. The factors affecting the OC of an open-hearth furnace during all

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On the Oxidizing Capacity of Open-hearth Furnaces

periods of the heat are set forth, and equations for calculating them are presented. The calculated OC of open hearths of various capacities are set forth in tabular form, as is the rate of oxidation of C when the furnace is operated at full and at half heat input. It is demonstrated that in practice the use of blower air as an intensifier of the open-hearth process is little if at all inferior to oxygen blast, although at low $[C]$ O_2 will burn off the C about 10-20% more rapidly than air blow.

M.K.

1. Open hearth furnaces--Performance 2. Chemical impurities--Oxidization
3. Fuels--Economic aspects

MEDZHIBOZHSKIY, M.Ye., kandidat tekhnicheskikh nauk.;SOKOLOV, I.A., inzhener.

Increasing the temperature in open hearth furnace baths by compressed air blasts. Stal' 17 no.3:220-227 Mr '57. (MLRA 10:4)

1. Sibirskiy metallurgicheskiy institut i Kuznetskiy metallurgicheskiy kombinat.
(Open hearth furnaces) (Compressed air)

SOV/137-58-9-18573

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 56 (USSR)

AUTHORS: Medzhibozhskiy, M.Ya., Sokolov, I.A., Shestakov, N.A., Vasil'yev, A.N.

TITLE: Compressed Air Blowing of Liquid Metal in Heavy-duty Open-hearth Furnaces (Vduvaniye kompressornogo vozdukha v zhidkuyu vannu bol'shegruznykh martenovskikh pechey)

PERIODICAL: Izv. vyssh. uchebn. zavedeniy. Chernaya metallurgiya, 1958, Nr 2, pp 34-47

ABSTRACT: A report on the results of 40 experimental smeltings carried out in the 390-ton open-hearth furnaces of the KMK (Kuznetsk Metallurgical Kombinat). Compressed air at a pressure of 3.5-5.0 atm gage was introduced into the hearth at a rate of 2500-2800 m^3/hr by means of two water-cooled tuyeres installed in the crown of the furnace. The blowing commenced 1-1.5 hrs prior to melting and terminated at the beginning or the mid-point of the pure "boil" period. In the course of the experimental smeltings, the rate of decarbonization became considerably faster, the dephosphorization process more efficient, and the content of FeO in the slag increased by 6% at the end of the

Card 1/2

Compressed Air Blowing of Liquid Metal in Heavy-duty Open-hearth (cont.)

melting stage. Instead of 1.0-1.5°C/min, as in the case of a standard smelting process, the temperature of the metal increased at a rate of 2.0-2.5°C/min; this made it possible to reduce the consumption of conventional fuel by an average of 7 kg per ton of ingots. In the process the degree of utilization of O_2 contained in the compressed air by the molten metal is increased by a factor of 4-8 owing to the increased supply O_2 from the atmosphere of the furnace. Compressed-air blowing at a pressure of 5.5 atm gage is equivalent in efficiency to blowing with pure O_2. The duration of a 390-ton melting process was reduced by 38 minutes on the average. The amount of dust being evolved during blowing does not exceed 1 g/m^3. No noticeable wear was observed in the furnace lining. Overoxidation of metal in the course of the blowing process was absent; at the same time the content of N amounted to only 0.0033%. The finished metal contains H, O, N, and slag inclusions in quantities analogous to those contained in standard metals. Mechanical properties of the steel were not impaired.

1. Open hearth furnace--Performance 2. Metals (Liquid)--Processing 3. Compressed air--Applications

V.G.

Card 2/2

130-58-4-10/20

AUTHORS: Medzhibozhskiy, M.Ya., Candidate of Technical Sciences, Tunkov, V.P., Smirnova, L.A., Engineers.

TITLE: Effectiveness of Blowing Compressed Air into the Bath of a Cold-charged Open-hearth Furnace (Effektivnost' vduvaniya szhatogo vozdukha v vannu martenovskoy pechi pri skrap-protsesse)

PERIODICAL: Metallurg, 1958, Nr 4, pp 17 - 19 (USSR).

ABSTRACT: The proposal to blow compressed air into the bath of open-hearth furnaces was made in 1939, when trials were run at the "Krasnyy Oktyabr'" Works. These (and later ones at the Kuznetskiy metallurgicheskikh kombinat (Kuznetsk Metallurgical Combine)) showed that production increases of 15 - 20 and 8 - 10% could be obtained thereby on 10 to 30-ton and over 185-ton furnaces, respectively. The authors discuss this work, explaining the action of the injected air to be that of stirring the bath and thereby facilitating contact with the hot furnace oxygen. They cite work at the above and also at the Serp i Molot Works to show that air blowing is advantageous with cold-charged furnaces, giving as illustration details of one experimental heat at the Kuznetsk Combine carried out by Medzhibozhskiy with the participation of I.A. Sokolova and M.M. Bazhenova in 1954 (Figure 1). The authors refer to

Card1/3

Effectiveness of Blowing Compressed Air into the Bath of a Cold-charged Open-hearth Furnace

development work on the process at the Serp i Molot Works on 70-ton cold-charged furnaces carried out with the participation of engineers Ya.L. Rozenblit, G.V. Sviridov, L.A. Smirnova and A.D. Zaytseva, which led to the adoption of the method in 1951. This work showed compressed air to be as effective as oxygen and since 1953 air has been used preferentially. Analysis of results shows that with a blowing time of 30 - 40 minutes, the charging-to-tap time is reduced by about 40 min below the unblown value (Figure 2). Decarburisation rates are about the same as with oxygen blowing, the value of the ratio (oxygen for carbon-oxidation)/ /(total oxygen blown into the bath) being 1 - 1.5 for oxygen and about 7 for air. Long experience at this and other works shows that steel quality (including nitrogen content) does not suffer through air blowing, and the decrease in furnace life through splashing, etc. is not great. The use of lagged lances has increased lance life and enabled immersion depths to be strictly controlled, thus minimising splashing. There are 2 figures and 2 tables.

Effectiveness of Blowing Compressed Air into the Bath of a Cold-charged Open-hearth Furnace

130-58-4-10/20

ASSOCIATIONS: Sibirskiy metallurgicheskiy institut (Siberian Metallurgical Institute) and the "Serp i Molot" Works.

Card 3/3

18(5) PHASE I BOOK EXPLOITATION SOV/2858

Medzhibozhskiy, Miron Yakovlevich

Intensifikatsiya martenovskoy plavki vduvaniyem kompressornogo vozdukha v vannu (Intensification of the Open-hearth Process by Means of Compressed-air Blast), Moscow, Metallurgizdat, 1959. 172 p. Errata slip inserted. 2,500 copies printed.

Ed.: V. P. Tunkov; Ed. of Publishing House: L. V. Yablonskaya; Tech. Ed.: A. I. Karasev.

PURPOSE: This book is intended for personnel at research institutes, for metallurgical engineers, and for advanced students.

COVERAGE: Theoretical principles of intensifying the open-hearth process with compressed-air blast are explained, calculations for the intensification process are presented, and various methods of introducing oxygen and air into the bath are described. Information on experimental heats, together with technical and economic data on the intensification process, is also given. No personalities are mentioned. There are 97 references: 77 Soviet, 15 English, 3 German, 1 French, and 1 Italian.

Card 1/4

24(8) PHASE I BOOK EXPLOITATION SOV/2117

Soveshchaniya po eksperimental'noy tekhnike i metodam vysokotemperaturnykh issledovaniy, 1956

Eksperimental'naya tekhnika i metody issledovaniy pri vysokikh temperaturakh; trudy soveshchaniya (Experimental Techniques and Methods of Investigation at High Temperatures; Transactions of the Conference on Experimental Techniques and Methods of Investigation at High Temperatures) Moscow, AN SSSR, 1959. 789 p. (Series: Akademiya nauk SSSR. Institut metallurgii. Komissiya po zharoprochnym splavam i zharostoykim pokrytiyam) 2,200 copies printed.

Resp. Ed.: A.M. Samarin, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bankvitser.

PURPOSE: This book is intended for metallurgists and metallurgical engineers.

COVERAGE: This collection of scientific papers is divided into six parts: 1) thermodynamic activity and kinetics of high-temperature processes 2) constitution diagram studies 3) physical properties of liquid metals and slags 4) new analytical methods and production of pure metals 5) pyrometry, and 6) general questions. For more specific coverage, see Table of Contents.

V. PYROMETRY

Svet, D.Ya. Modern Radiation Pyrometry 546

Rudnitskiy, A.A. Thermocouples for Measuring High Temperatures 563
Several types of thermocouples were investigated for their suitability for use at high temperatures (mostly in the 1700-2500° C range). The most satisfactory types were found to be those of platinum and rhodium alloys (for use in the 1300-1850° C range). An advantage of these thermocouples is the stability of their thermoelectric characteristics in an oxidizing atmosphere, an inert-gas atmosphere, and in vacuum; a reducing atmosphere, however, is harmful to this type of thermocouple.

Svet, D.Ya., and Ye. S. Lipin. TsEP-2M Automatic Photoelectric Optical Pyrometer 574

Spektor, Ya. Z. Temperature Measurement in Vacuum Melting 580

Nadzhiborchakiy, M.Ya. Use of Submerged Thermocouples for Determining the Rise in Temperature of the Open-Hearth Bath During the Blowing of Compressed Air Through the Metal 586
Measurements of metal temperatures with a thermocouple made it possible to show that in the blowing of compressed air through the open-hearth bath the rise in temperature is more rapid than in ordinary boiling and takes place in proportion to the acceleration in the rate of carbon combustion. The oxidation of carbon during the blast takes place primarily as a result of the oxygen absorbed by the bath from the atmosphere in the furnace (heated to about 1700°C), which assures a substantial heat effect and a sharp rise in the temperature of the metal. With a blast of 12-15 m3/min and a pressure of 3.5-4.0 atm (gauge) the rate of increase in the temperature of the metal amounts to about 3°/min.

MEDZHIBOZHSKIY, M.Ya., dots., kand.tekhn.nauk; KOROCHKIN, Ye.I., inzh.

Frothing of open-hearth furnace slags. Izv.vys.ucheb.zav.; chern.met. 2 no.8:39-44 Ag '59. (MIRA 13:4)

1. Sibirskiy metallurgicheskiy institut. Rekomendovana kafedroy metallurgii stali Sibirskogo metallurgicheskogo instituta.
(Open-hearth process) (Slag)

MEDZHIBOZHSKIY, M. YA., Doc Tech Sci, "Intensification of the Martin Process by Forcing Compressed Air into a bath" Sverdlovsk, 1960. (Min of Higher and Sec Spec Ed RSFSR. Ural Polytech Inst im S. M. Kirov). (KL, 2-61, 206).

S/148/60/000/006/012/016/XX
A161/A030

AUTHORS: Medzhibozhskiy, M.Ya.; Zinov'yev, V.T.; Geyneman, A.V.

TITLE: The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960, No. 6, pp. 47 - 53

TEXT: Most authors consider that the oxidation of carbon in the open-hearth bath is limited by diffusion links, but some point out that it may also be limited by heterogeneous chemical reactions on the boundaries gas-slag, slag-metal and metal-bubbles. The question of in what region the process takes place, diffusion (limitation by diffusion links) or kinetic (chemical links) can be answered by determining the effect of the temperature on the speed of the process. With relatively slow chemical reactions the process rate will change with temperature in accordance with the Arrenius equation

$$K = K_0 e^{-\frac{E}{RT}} \quad (1)$$

where K is the constant of the chemical reaction rate; K_0 the so-called preexpo-

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nential factor; e the base of natural logarithms; E the activation energy, cal/mol; R the universal gas constant, 1.986 cal/mol °K; T the absolute temperature, °K. It follows that

$$E = \frac{4.575 \lg \frac{K_2}{K_1}}{\frac{1}{T_1} - \frac{1}{T_2}}, \qquad (2)$$

K_1 and K_2 are constants of the chemical reaction speed at T_1 and T_2 temperatures. The process is in the kinetic region if the activation energy value is high (> 50,000 cal/mol), and in the diffusion region if it is relatively low (>30,000 cal/mol). The authors studied over 400 heats in 380 and 190-ton open-hearth furnaces firing mixed coke and generator gas; temperature was measured by means of a submerged platinumrhodium-platinum thermocouple. Over 1,200 carbon oxidation rate values were determined (v_C) at different temperatures (t_M) and C content in metal. The relations shown were verified by mathematical statistic methods. The effect of the C content in metal, of the specific surface area of the slag-metal boundary, and the quantity of oxygen was also studied. The results are illustrat-

The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

ed by diagrams (Figs. 1, 2, 3). The low activation energy proves that the process is in the diffusion region. Low activation energy values in the steel decarbonization process had also been obtained in laboratory experiments by S.I. Filippov (Ref. 1) and in shop experiments by P. Vallet (Ref. 7, Iron and Steel, 1955, No. 11). Conclusions: 1) The carbon burning rate does not depend on the carbon content in metal if % C>0.3%. 2) The effect of the temperature of the metal on the carbon burning rate is not strong at superheating above the liquidus point (>20°) and corresponds with the apparent activation energy of the decarbonization process amounting to 15,000 - 22,000 cal/mol. This means that the process takes place in the diffusion range. 3) The decarbonization rate depends on the intensity of oxygen feed into the bath and is not limited by any of the heterogeneous reactions on the boundary's gas-slag, slag-metal and metal-bubbles. 4) At % C<0.3%, the relation between v_C and % C is caused not by the fact that the decarbonization process is in the kinetic region, but by other causes that had been pointed out in the works (Refs. 1, 8, 9, 10). 5) The indirect effect of % C and t_M on v_C is very considerable with large additions of iron ore into the bath. The intensity of carbon burning through ore additions (which reduce the

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bath temperature) is limited by the necessity to maintain the minimum superheating of metal. There are 3 figures and 12 references: 11 Soviet and 1 English.

ASSOCIATION: Sibirskiy metallurgicheskiy institut (Siberian Metallurgical Institute)

SUBMITTED: October 27, 1959

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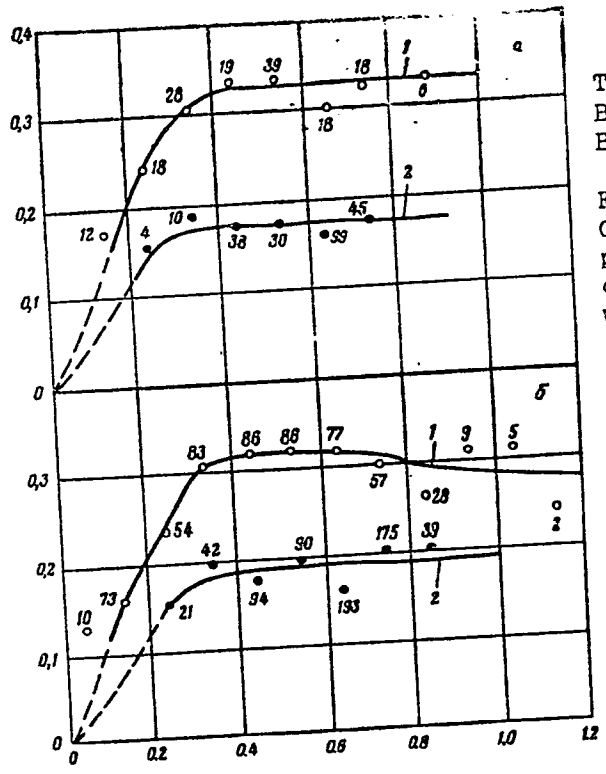

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Figure 1: The effect of C content on the C burning rate during the pure boiling period. (The figures at the points indicate the number of heats). a - boiling without ore in the 1,570 - 1,620° range (in 190-ton furnace) and in 1,540 - 1,580° (380-ton furnace); b - by the data from all samples taken during pure boiling. 1 - 190-ton furnace; 2 - 380-ton furnace.

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A161/A030

The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

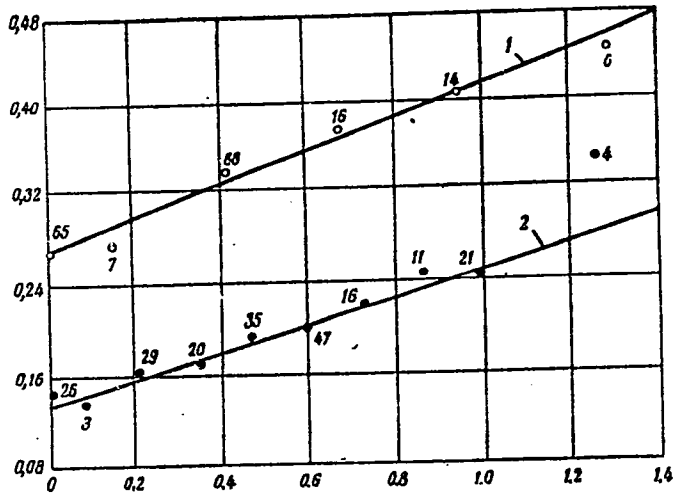

Figure 2: The effect of iron ore additions on the carbon burning rate at the beginning of the pure boiling time: 1 - 190-ton furnace; 2 - 380-ton furnace. (Ore consumption from 0.2 to 1.4 %/h).

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A161/A030

The Effect of Some Factors on the Carbon Burning Rate in the Open-Hearth Furnace Bath

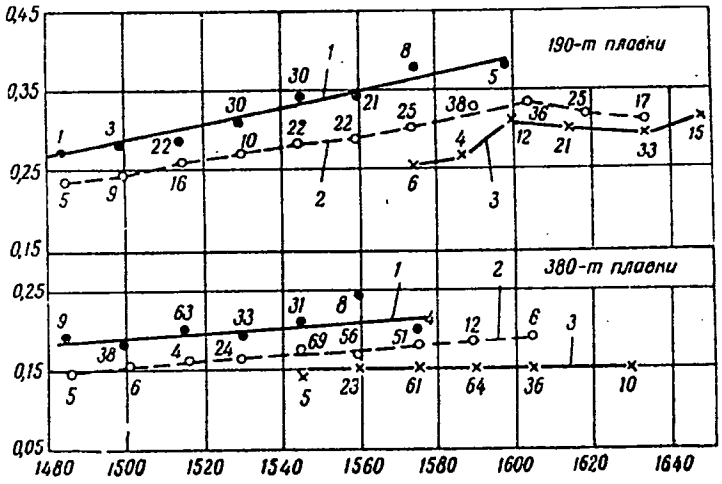

Figure 3: The effect of metal temperature on the carbon burning rate during the pure boiling time: 1 - the beginning of pure boiling time (ore consumption about 0.5%/h, or 0.17%, during the first 20 min); 2 - the beginning and the mid of the pure boiling time (without ore additions); 3 - the last 15 - 20 min of pure boiling.

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S/148/60/000/010/005/018
A161/A030

AUTHORS: Medzhibozhskiy, M.Ya.; Gurov, A.K.

TITLE: Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960 No. 10, pp. 67 - 78

TEXT: The effect of blowing was studied in a 30-ton furnace working with the basic scrap process and firing cold coke gas, with a tar addition for flame carburation. The air blow pipe was lined with magnesite chrome mortar, had a 25 mm inner diameter, and was introduced into the bath through the charging door at 35 - 45°, 100 - 300 mm below the metal surface. Air was fed at a rate of 400 - 750 m^3/h under 5-6 atm pressure in the line. A total of 57 heats with air blowing were studied and compared with conventional processes and the oxygen process. Dust samples from the smoke gas were taken by an ejector through water-cooled pipe (Figure 1) into three trap vessels with distilled water, and dedusted gas passed a gas flow meter. Metal temperature was measured with a submersion thermocouple connected to a recording electronic potentiometer. The previously stated (Ref. 2,

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3) phenomenon was confirmed - that the oxygen from the atmosphere in the furnace played the major part in oxidation of carbon in the bath (69 - 70% of total), and the effect of blowing compressed air was near the effect of oxygen blow. Direct observations proved that blowing must be started after the metal has reached a certain overheat over the point of liquidus, i.e., about 40°C above it, for the carbon burning rate dropped abruptly at lower overheating or underheating. The volume of compressed air had a determining effect on the carbon burning rate (v_c) (Fig. 2) and the v_c rose faster than in direct proportion with increasing air volume. This is explained by the growth of the oxygen share absorbed by metal from the hot air in the furnace. The metal temperature had a noticable effect on v_c only in the temperature range from 1380 - 1500°C, and not the absolute temperature value but the degree of overheat produced the effect. This proves that the carbon oxidation value during blowing is limited by diffusion processes whose rate depends on the viscosity of metal and slag, and not by chemical reactions whose rate grows steeply with increasing temperature. As is known, the viscosity of liquid steel is low and decreases only little with increasing temperature, but near the liquidus point the effect is high, i.e. between -40 and

Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

+40°C from the liquidus (Fig. 4). When metal contains 2%C (liquidus temperature at 1368°), blowing at 1400 - 1420° has high decarbonizing effect. The dust separation is high with pure oxygen blowing, probably not through the evaporation of iron only, but also through the evaporation of FeO and mechanical separation of particles. As is obvious from the calculations and diagrams of L.M. Yefimov, (Ref. 8), the addition of nitrogen to the blast abruptly decreases the intensity of evaporation of iron. The following results have been calculated for 1600°K bath temperature:

O_2 content in blast (%)	100	50	21 (compressed air)
N_2/O_2 ratio	0	1	3.762
Intensity of iron evaporation in kg-atom Fe/kg-mol O_2	0.4	0.26	0

Calculations prove that a considerable reduction of dust drag-out can be achieved by a) deeper submersion of the oxygen or air jet into metal, b) lowering the temperature by addition of nitrogen to blast, c) blowing oxygen at relatively low C content in metal. The quantity of dust in combustion products is slightly higher with compressed air blowing than in usual process, but much lower than with oxygen blowing. In an investigation with 70-ton furnaces (Ref. 1), the dust quantity was

Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

20 times higher with oxygen blowing than in the usual process; in a 30-ton furnace (the subject experiments) the difference would be even larger. In the case of compressed air blowing, the dust separation is much lower than in the case of oxygen, and blowing can still be started at a high C content in the bath. This is very important in the scrap-ore process where C content reaches 3.0% and more. Blowing in the fusion period enables a much lower use of iron ore in charge, and in combination with intense mixing by compressed air this will cut the fusion period. In this respect compressed air has great advantages, for oxygen blowing is usually employed only during finishing, at a relatively low C content (to prevent high dust separation and furnace lining wear). Data obtained in this investigation and published previously (Ref. 10), (on the durability of 360-ton and 200--ton furnaces) prove that the durability of lining is approximately the same with compressed air blowing as in conventional process, and much higher than with oxygen blowing. It was not possible to determine the chemical composition of separate dust samples because of the low weight (0.05 - 6 g), and the samples were mixed. The mean components content is about the same as in the usual process; iron oxides predominate. There are 5 figures, 5 tables and 11 references, 10 Soviet and 1 German.

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Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

Figure 2: The effect of the compressed air volume on the carbon burning rate. Air pressure 3.5-6.0 atm. (Figures indicate the number of blowings). V-actual carbon burning rate; V'_C -same, on account of O_2 from blown air; V''_C -same, on account of O_2 from air in the furnace. (Air volume in m^3/h).

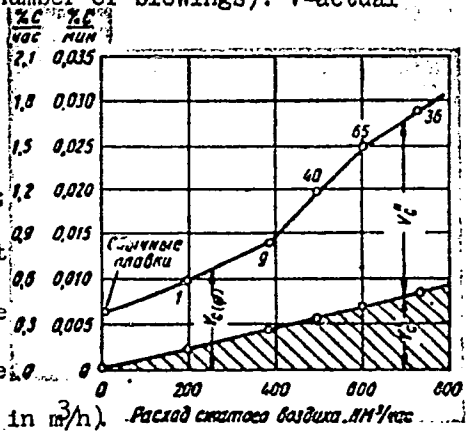
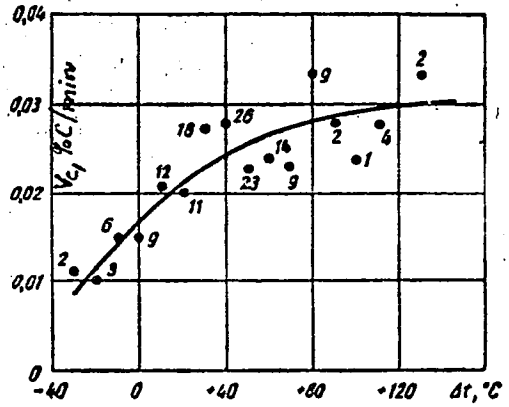


Figure 4: The effect of metal overheat on the carbon burning rate.



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S/148/61/000/002/002/011
A161/A133

AUTHOR: Medzhibozhskiy, M. Ya., Gurov, A. K.

TITLE: The effect of compressed air blowing on the melting indices of the open-hearth scrap process

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 2, 1961, 32 - 38

TEXT: The article presents the results of experimental open-hearth steel melting that had been described by the authors previously: (Ref. 1: M. Ya. Medzhibozhskiy, A. K. Gurov, Izv. vyssh. uch zavedeniy. Chern. met., no. 10, 1960). The charge of the ordinary heat consists of 25% pig iron, 75 scrap, 0.6 coke and 2.0 lime. In the test heats the coke content was raised to 0.8%, and in individual heats to 1.5. An increased carbon content in the charge and the iron ore additions during finishing made it possible to blow the bath through during the second half of the smelting period (when the scrap is molten and the entire bath covered with liquid metal and slag) and in the first half of finishing. The effect of air blowing on the smelting time required for 30-ton heats was determined by comparing the time of each of 57 test heats with 2 - 3 ordinary heats of same steel grade.

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It is mentioned that analogous experiments had been conducted previously in large-capacity furnaces at the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine) and at the "Zaporozhstal" Plant, and air blowing did not impair the mechanical properties of the steel. Conclusions: 1) Air blowing for 15 min reduced the smelting time of 30-ton heats by 33 min (average). The time again was 42 min on the average per heat. The furnace productivity rose by 9 to 13%. 2) The output of serviceable metal in percent of the whole metal charge (including ore) was practically the same as in the ordinary process. 3) The iron oxide content was about the same in the ordinary and the test melts. 4) Air blowing considerably accelerates the formation of highly basic slag. 5) The carbon burning rate in 30--ton heats was 1.3 - 1.6%/h at 600 m^3/h average air consumption, which is about 4 times faster than in the ordinary process. 6) Air blowing did not spoil metal in any respect (i.e. the mechanical properties, the content of oxygen, nitrogen, hydrogen, nonmetallic inclusions and harmful impurities in the finished steel). 7) Furnace lining service life was about the same as usual. 8) The separation of dust in the process with air blowing is insignificant, and blowing may be started during the smelting at a high carbon content. This shortens the longest heat period - smelting. 9) The conditional fuel consumption was reduced by 10%. 10) The temperature of the furnace top and bottom lining, as well as of the fumes in the

The effect of compressed air blowing on the melting ...

flue at the stack is only slightly higher than usual and not above the permissible value. This is achieved by the reduced fuel consumption and the increase in fan air consumption during blowing. There are 1 figure, 5 tables and 4 Soviet-bloc references.

ASSOCIATION: Sibirskiy metallurgicheskiy institut (Siberian Metallurgical Institute)

SUBMITTED: November 25, 1959

MEDZHIBOZHSKIY, M.Ya.; PRIVALOV, M.M.; GUROV, A.K.; MOKRUSHIN, V.V.; GRITSKOV, V.S.

Efficiency of the various variants for injecting compressed air into the fuel spray and the bath of large open-hearth furnaces. Izv. vys. ucheb. zav.; chern. met. 5 no.8:35-43 '62. (MIRA 15:9)

1. Sibirskiy metallurgicheskiy institut i Kuznetskiy metallurgicheskiy kombinat.

(Open-hearth furnaces) (Compressed air)

MEDZHIBOZHSKIY, M.Ya.

Using the blowing of open-hearth furnace baths for the automatic control of metal decarburization processes. Izv. vys. ucheb. zav.; chern. met 5 no.10:166-171 '62. (MIRA 15:11)

1. Sibirskiy metallurgicheskiy institut.
(Open-hearth process)

S/148/62/000/012/001/008
E071/E151

AUTHORS: Medzhibozhskiy, M.Ya., Privalov, M.M., Gurov, A.K., and Pokrushin, V.V.

TITLE: Features of the technology and quality of steel for different variants of air injection into the flame and the bath of a large open hearth furnace

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.12, 1962, 41-55

TEXT: The investigation was carried out on a 400 ton open hearth furnace operating with 60-62% hot metal charge and fired with a mixture of coke oven gas and producer gas. The experimental method, and the technical, thermal and economic criteria of operation, have been described previously (Izv. VUZ, Chernaya metallurgiya, no.8, 1962). It is concluded that: the injection of compressed air into the flame and the bath led to improvements as measured by all the criteria. Blowing the bath had the following effects: a) the dephosphorisation of the metal was completed during the melting period; b) the desulphurisation of steel is considerably speeded up; c) the rate of carbon elimination

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Features of the technology and ...

increases by a factor of 1.5 - 2.0 and during the actual blowing period by a factor of 2.0 - 2.2; d) the rate of increase of the metal temperature is accelerated by 70% and amounts to 114 °C/hour; e) slag formation is accelerated, resulting in the early formation of a homogeneous slag. The rate of carbon elimination is most strongly influenced by the excess of oxygen in the furnace gases at the burner intake. An increase of the flow rate and pressure of the injected air is effective if it is accompanied by an increase in the excess oxygen in the furnace atmosphere. A clear relationship between the rate of carbon elimination and the excess of oxygen in the furnace atmosphere permits the use of air injection into the bath for the automatic control of refining. The use of air injection into the bath does not cause a deterioration in steel quality in comparison with steel produced by other methods of air injection or with steel produced by conventional methods. It is particularly important that in the course of the heat as well as in the finished steel, the content of nitrogen and oxygen in the metal both during the heat and in the finished steel shall remain the same as in heats with air

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injection to the flame only, or in heats carried out by the conventional methods.
There are 6 figures and 6 tables.

ASSOCIATION: Sibirskiy metallurgicheskiy institut
(Siberian Metallurgical Institute)

SUBMITTED: December 27, 1961

Card 3/3

MEDZHIBOZHSKIY, M.Ya.; PRIVALOV, M.M.; GUROV, A.K.; MOKRUSHIN, V.V.; GRITSKOV, V.S.; Prinimali uchastiye: TSYMBAL, V.P.; BYCHKOV, P.M.; KURGUZKIN, V.P.; VALOV, M.Ye.; SHCHEKOLKIN, M.S.

Making a combined use of compressed air in a high-capacity open-hearth furnace. Stal' 22 no.10:894-900 O'62. (MIRA 15:10)
(Open-hearth furnaces) (Compressed air)

MEDZSIBOZSSZKIJ, M.J. [Medzhibozhskiy, M.Y.], a muszaki tudomanyok doktora, egyetemi tanar; PROKSA, Ferenc [translator]

Increase of the output of the Siemens-Martin furnaces through blasting compressed air into the bath. Koh lap 95 no.11:481-490 N '62.

1. Sziberiai Kohaszati Egyetem (for Medzhibozhskiy).

MEDZHIBOZHSKIY, M. Ya.; GUROV, A.K.

Blowing an open-hearth heat with compressed air. Metallurg 9 no.1:16-19 Ja '64 (MIRA 18:1)

1. Sibirskiy metallurgicheskiy institut.

KAZAKOV, A.A.; MEDZHIBOZHSKIY, M.Ya.; GUBAR', V.F.

Dependence of the oxygen content in open-hearth steel on technological factors. Izv. vys. ucheb. zav.; chern. met. 7 no.11:59-65 '64. (MIRA 17:12)

MEDZHIBOZHSKIY, Miron Yakovlevich

[Use of compressed air in the open-hearth process] Primenenie szhatogo vozdukha v martenovskom proizvodstve. 2. izd., perer. i dop. Moskva, Metallurgiia, 1965. 191 p. (MIRA 18:3)

MEDZHIBOZHSKIY, M.Ya., doktor tekhn. nauk; KURAPIN, B.S.; GEYNEMAN, A.V.; DVORYANINOV, V.A.; MOISEYENKO, A.I.; LOSHCHEV, V.Ya.

Nitrogen-content in the metal during the blowing of the open-hearth furnace bath with compressed air. Met. i gornorud. prom. no.6:23-26 N-D '65. (MIRA 18:12)

MEDZHIBOZHSKIY, M.Ya.; KAZAKOV, A.A.

Limiting element in the reaction of carbon oxidation in a steel smelting bath. Izv. vys. ucheb. zav.; chern. met. 8 no.5:12-16 '65. (MIRA 18:5)

1. Donetskiy nauchno-issledovatel'skiy institut chernoy metallurgii.

SOBOLEV, V.M.; MEDZHIBOZHSKIY, M.Ya.; FILIPPOVA, N.Ya.

Economic comparison of oxygen and compressed air methods for the intensification of steel smelting. Izv.vys.ucheb.zav.; chern.met. 8 no.6:202-206 '65. (MIRA 18:8)

1. Dnepropetrovskiy filial Instituta avtomatiki, Donetskiy nauchno-issledovatel'skiy institut chernoy metallurgii i Dnepropetrovskiy filial Instituta ekonomiki AN UkrSSR.

88722

S/190/61/003/001/001/020
B119/B216

15.8110

AUTHORS: Yasnopal'skiy, V. D., Medzhidov, A. A.

TITLE: The synthesis of several epoxy resins

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 1, 1961, 3-6

TEXT: The authors synthesized various epoxy resins from epichlorohydrin and compounds containing several hydroxyl- or amino groups, or other funotional groups, with the objective of establishing the dependence of the resin properties on the initial components. The syntheses were performed according to the method described by A. A. Berlin (Ref. 3). The following substances were reacted with epichlorohydrin: resorcinol, phloroglucinol, α-naphthyl amine, p-phenylene diamine, anthranilic acid, naphthionic acid, thiobenzamide and hydrazine hydrochloride. All these substances, with the exception of thiobenzamide, gave polymers varying more or less as regards solubility in various solvents, melting point, color, etc. The product obtained from α-naphthyl amine showed fiber-forming properties. The fibers drawn from the melt were very brittle,

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The synthesis of several epoxy resins

however. Fibers obtained from aniline and epichlorohydrin under the same conditions (Ref. 4) did not exhibit this property. The authors attribute the brittleness to the presence of condensed benzene rings in the polymer. Indeed, all the substances containing benzene rings gave solid polymers with epichlorohydrin. In contrast, hydrazine hydrochloride yielded a liquid polymer having the general formula $\left[\begin{matrix}-NCH_2CH(OH)CH_2- \\ -NCH_2CH(OH)CH_2-\end{matrix}\right]_n$. There are 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Institut neftekhimicheskikh protsessov AN AzSSR (Institute of Petrochemical Processes of the AS Azerbaydzhanskaya SSR)

SUBMITTED: March 31, 1960

88723

S/190/61/003/001/002/020
B119/B216

15.8114

AUTHORS: Yasnopal'skiy, V. D., Medzhidov, A. A.

TITLE: On the action of magnesium on p-xylylene dibromide

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 1, 1961, 7-9

TEXT: Referring to a publication by W. H. Carothers (Ref. 1) published in 1931 which mentions the formation of a polymer by the action of Mg on p-xylylene dibromide, the authors undertook the present study to gain information on the structure and other properties of this polymer. 9.5 g of Mg and 54 g of p-xylylene dibromide in a dry benzene - ether mixture were refluxed in a round-bottomed flask for 5 days on a steam bath. After shaking with water and settling, a yellow powdery substance collected at the phase boundary between the aqueous and yellow organic phase, which after purification with benzene and boiling water, was neither fusible nor soluble in alcohols, acetone, acetic acid, ether or decalin. The yield was approximately 16 g. The analytical data and comparison with results obtained on reaction of 1,3-dibromo propane with Mg (Ref. 2) indicate the

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On the action of magnesium on... S/190/61/003/001/002/020
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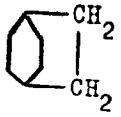
structure of the polymer to be BrMg -[CH_2-⬡-CH_2]n MgBr. The molecular weight of the substance is 5408, the number of repeats being about 50. By a side-reaction, a small quantity of the compound with structure



was obtained. There are 2 non-Soviet-bloc references.

ASSOCIATION: Institut neftekhimicheskikh protsessov AN AzSSR (Institute of Petrochemical Processes, AS Azerbaydzhanskaya SSR)

SUBMITTED: March 31, 1960

Card 2/2

BUCHACHENKO, A.L.; GOLUBEV, V.A.; MEDZHIDOV, A.A.; ROZANTSEV, E.G.

Electron paramagnetic resonance spectra of biradicals having a weak exchange reaction. Teorat. i eksper. khim. 1 no.2:249-253 Mr-Ap '65. (MIRA 18:7)

1. Institut khimicheskoy fiziki AN SSSR, Moskva.

YASNOPOL'SKIY, V.D.; MEDZHIDOV, A.A.

Synthesis of polymers from α-dichloromethyl ether and aromatic amines. Plast.massy no.5:64 '61. (MIRA 14:4)
(Polymers) (Amines)

MEDZHIDOV, A.A.; BUCHACHENKO, A.L.; ROZANTSEV, E.G.; NEYMAN, M.B.

Chromatographic separation of the radicals formed during the oxidation of hydrogenated 2,2,4-trimethylquinolines. Izv. AN SSSR Ser.khim. no.10:1713-1717 O '63. (MIRA 17:3)

1. Institut khimicheskoy fiziki AN SSSR.

ROZANTSEV, E.G.; MEDZHIDOV, A.A.; NEYMAN, M.B.

Kinetically stable radicals of the pyrrole series. Izv. AN SSSR Ser.khim. no.10:1876-1877 O '63. (MIRA 17:3)

1. Institut khimicheskoy fiziki AN SSSR.

NEYMAN, M.B.; MEDZHIDOV, A.A.; ROZANTSEV, E.G.; SKRIPKO, L.A.

New reaction for forming stable Würster salts.
Dokl. AN SSSR 154 no.2:387-390 Ja'64. (MIRA 17:2)

1. Institut khimicheskoy fiziki AN SSSR. Predstavleno akademikom A.A. Balandinym.

MEDZHIDOV, A.A.; BUCHACHENKO, A.L.; NEYMAN, M.B.

Possibility of acid-basic catalysis of radical reactions. Dokl. AN SSSR 161 no.4:878-881 Ap '65. (MIRA 18:5)

1. Institut khimicheskoy fiziki AN SSSR. Submitted September 22, 1964.

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ACC NR: AP7003124 SOURCE CODE: UR/0192/66/007/002/0187/0191

AUTHOR: [illegible]; [illegible], A. [illegible]; [illegible], A. A.; [illegible]

ORG: Institute of Chemical Physics, AN SSSR (Institut khimicheskoy fiziki AN SSSR)

TITLE: Organomercury free radicals

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 2, 1966, 187-191

TOPIC TAGS: organomercury compound, free radical, EPR spectrum

ABSTRACT: The first representatives of organomercury stable radicals were obtained in solution and their electron paramagnetic spectra were investigated. Hyperfine structure was analyzed for nuclei of magnetic isotopes of mercury. The value of MacConnell's constant for isotropic hyperfine interaction with the isotopes Hg^{199} and Hg^{201} was determined. Mercury derivatives of N-ter-butylaniline, 2,2,4-trimethyl-1,2,3,4-tetrahydroquinoline, and 2,2-dimethylindoline were described. The authors thank F. M. Yegidis for furnishing the N-ter-butylaniline. Orig. art. has: 5 figures and 1 table. [JPRS: 38,970]

SUB CODE: 07 / SUBM DATE: 25Jun65 / ORIG REF: 003 / OTH REF: 004

Card 1/1 UDC: 538.113

0925 2083

MEDZHIDOV, B.

Second Congress of Epidemiologists, Microbiologists and Infectious Disease Specialists of the Azerbaijan S.S.R. Azerb. med. zhur. 40 no.12:72-75 D '63. (MIRA 17:10)

Jul 53

MEDZHIDOV, B. F.

USSR/Medicine - Dysentery

"Preliminary Results of an Investigation of the Effectiveness of Complex Measures for the Prophylaxis and Suppression of Dysentery," B. F. Medzhidov

Zhur Mikro, Epid, i Immun, No 7, pp 26-27

In the rayon studied (apparently a city district) the incidence of dysentery was higher than the average by two thirds. The reason was presence of a considerable number of persons suffering from chronic dysentery. These disease carriers were successfully treated. In cases when the cause of infection could be determined, 73% of infections were found to be due to contact with persons having acute dysentery, and 27% to contact with persons having chronic dysentery. In 50% of cases, the means of transmission could be determined. In 18.4% of cases, transmission by food was established. Active immunization against dysentery proved ineffective.

267T41

MEDZHIDOV, B. F., ALIYEV, N. D., et all

" On Shortcomingsin the Work of the Republic's Laboratories," a report given at the first republic scientific-practical conference of physician-bacteriologists of the Scientific Research Institute of Epidemiology, Microbiology, and Hygien of the Ministry of Health, Azerbaydzhan SSSR held in Baku, 25 Apr 56.

SUM: 1360 p. 239

1364. CHIEF PROBLEMS OF THE EPIDEMIOLOGY OF CHILDREN'S DYSENTERY IN BAKU (1955) (Russian text) - Medzhidov B. F. - MED. ZH. AZ. 1957, 6 (59-63)

Analysis of the bacterial dysentery sick-rate according to age showed that the under 12 months age group constitutes 21% of the total sick-rate of the population, the age group 1-2 yr. 25%, and the age group 3-4 yr. 2.8%. The sick-rate of dysentery in children in a non-organized zone is 4.3 times greater than the same index in children in an organized zone. To successfully combat acute intestinal diseases, including dysentery, comprehensive measures should be carried out. (S)

MEDZHIDOV, B.F.; BERMAN, S.Ya.

Results of studying intestinal infections in the Azerbaijan S.S.R. Zhur.mikrobiol.epid. i immun. 30 no.5:136 My '59. (MIRA 12:9)

1. Iz Instituta epidemiologii, mikrobiologii i gigiyeny Ministerstva zdravookhraneniya Azerbaydzhanskoy SSR.
(INTESTINES--DISEASES)

MEDZHIDOV, B.F.; KERIM-ZADE, K.G.

Epidemiology of infectious hepatitis in the Azerbaijan S.S.R.
Vop.virus. 7 no.6:744 N-D '62. (MIRA 16:4)

1. Nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i gigiyeny Azerbaydzhanskoy SSR.
(AZERBAIJAN—HEPATITIS, INFECTIOUS)

MEDZHIDOV, B.F.; KYAZIMOVA, A.A.; GADZHIYEVA, Z.G.; NADZHAFOVA, F.K.

Epidemiological and virological characteristics of influenza in the Azerbaijanian S.S.R.. Zhur.mikrobiol.epid.i immun. 33 no.5: 124 My '62. (MIRA 15:8)

1. Iz Azerbaydzhanskogo instituta epidemiologii i mikrobiologii.
(AZERBAIJAN—INFLUENZA)

MEDZHIDOV, B.F.

Interinstitutional conference on the epidemiology and hygiene of populated areas (Baku, from May 29 to June 1, 1962). Azerb.med. zhur. 40 no.1:79-85 Ja '63. (MIRA 16:3)
(EPIDEMIOLOGY—CONGRESSES) (HYGIENE—CONGRESSES)

MEDZHIDOV, B.F., doktor med. nauk, prof.; LUR'YE, M.I., prof.

[Bacterial dysentery; materials from the Azerbaijan S.S.R.] Bakterial'naia dizenteriia; po materialm Azerbaidzhanskoi SSR. Baku, Azerbaidzhanskoe gos. izd-vo, 1964. 257 p. (MIRA 17:12)

L 26015-66 ENT(d) IJP(c) GS

ACC NR: AT6013425 SOURCE CODE: UR/0000/65/000/000/0087/0094

20
B+1

AUTHOR: Medzhitov, M.

ORG: none

16

TITLE: Integral and integrodifferential equations with diverging argument

SOURCE: AN KazSSR. Sektor matematiki i mekhaniki. Issledovaniya po differentsial'nym uravneniyam i ikh primeneniyu (Research on differential equations and their application). Alma-Ata, Izd-vo Nauka, 1965, 87-94

TOPIC TAGS: integral equation, integrodifferential equation, Fredholm equation, continuous function, uniqueness

ABSTRACT: The class of integral equations

$$y(x) = f(x) + \lambda \int_a^b K(x, t) L[y(t)]\, dt, \qquad (1)$$

where

$$L[y(x)] = \sum_{i=0}^{n} a_i(x) y^{(i)}(u(x)) \qquad (2)$$

is considered. Various theorems are constructed for the solution, analogous to the classical Fredholm theorems. It is assumed that f, K, a_i and u are continuous functions in $a \leq x, t \leq b$. The solution of equation (1) is considered under the

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condition $y^{(i)}(u(x)) = \varphi_i(u(x))$, if $u(x) < a$. (3)

In theorem 1 it is shown that if λ is not an eigenvalue of the equation

$$v(x) = \lambda \int_c^b H(x, t)\, v(t)\, dt, \quad (4)$$

then the integrodifferential equation (1), with the condition of equation (3), has the unique and continuous solution

$$y(x) = f(x) + \lambda \int_a^b K(x, t)\, z(t)\, dt. \quad (5)$$

In theorem 2 it is shown that if λ_0 is an eigenvalue of equation (4) of order q, then

$$y(x) = \lambda \int_a^b K(x, t)\, L[y(t)]\, dt \quad (6)$$

has q-linear-independent solutions given by

$$y_i(x) = \lambda_0 \int_c^b K(x, t)\, v_i(t)\, dt, \quad (i = \overline{1, q}) \quad (7)$$

which form a complete system. Finally, theorem 3 shows that the necessary and sufficient condition to make equation (1) solvable is given by the q-conditions

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ACC NR: AT6013425

$$\int_c^b g(x)\varphi_i(x)dx = 0, \quad (i=\overline{1, q}). \qquad (8)$$

Using the three theorems, the solution of the integral equation

$$y(x) = f(x) + \lambda \sum_{i=1}^{m} g_i(x)y(x_i) + \lambda \int_a^b K(x, t)\, y(t)\, dt \qquad (9)$$

is investigated. Equations (1) and (3) are also analyzed with the initial function

$$y^{(i)}(a(x)) = y^{(i)}(a)\,\varphi_i(a(x)), \quad (i=\overline{0, n}). \qquad (10)$$

Orig. art. has: 26 equations.

SUB CODE: 12/ SUBM DATE: 23Jun65/ ORIG REF: 002

Card 3/3

L 11167-66 EWT(l)/EWT(m) JD

ACC NR: AP6000366 SOURCE CODE: UR/0286/65/000/021/0061/0061

AUTHORS: Devyatov, G. K.; Levit, M. Ye.; Ivanov, V. I.; Kostomakhin, V. A.; Medzhitov, R. D. 44 44 44 44 41 23

ORG: none

TITLE: Device for contactless measurement of rotor sag. Class 42, No. 176106 [announced by Moscow Order of Lenin Aviation Institute, im. Sergo Ordzhonikidze (Moskovskiy ordena Lenina aviatsionnyy institut)] 44

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 21, 1965, 61

TOPIC TAGS: electronic circuit, detection equipment

ABSTRACT: This Author Certificate presents a device for contactless measurement of rotor sag. The device contains a capacitive unary sensor included in a resonance circuit supplied by a high frequency oscillator, a detector, and a matching stage with a meter (see Fig. 1). To simplify the measuring process and to increase the readout accuracy, a compensating capacitor is inserted in the resonance circuit in series with the sensor. The capacitor insures a linear dependence between the magnitudes of the output voltage and rotor sag.

Card 1/2 UDC: 531.717.2:621.317.39

L 11167-66

ACC NR: AP6000366

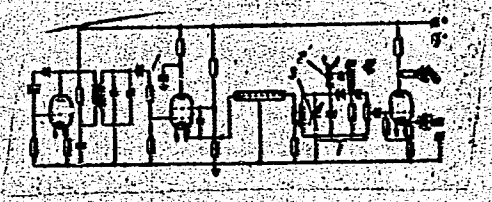

Fig. 1. 1 - Resonance circuit; 2 - sensor; 3 - compensating capacitor.

Orig. art. has: 1 diagram.

SUB CODE: 09/ SUBM DATE: 17Jul64

Card 2/2

MEDZHITOV, R.M.

Forecasting radiation fog. Trudy TSIP no.42:11-19 '56. (MLRA 9:11)

1. Belorusskaya nauchno-issledovatel'skaya geofizicheskaya observatoriya.

(Fog)

MEDZHITOV, R.M.

A.S.Zverev's graphic method for forecasting the minimum temperature of night air and radiation fog. Trudy TSIP no.42:20-24 '56. (MLRA 9:11)

1. Belorusskaya nauchno-issledovatel'skaya geofizicheskaya observatoriya.

(Fog) (Atmospheric temperature)

MEDZHITOV, R.M.

Conditions for the formation and prognosis of frosts in White Russia. Shor.rab.Minsk. GMO no.1:11-38 '58. (MIRA 12:3)
(White Russia--Frost)

MEDZHITOV, R.M.

Mean values of Richardson's number in the lower five-kilometer layer of the free atmosphere over Minsk. Sbor.rab.Minsk. GMO no.2:5-12 '59. (MIRA 13:4)
(Minsk region--Atmospheric turbulence)

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S/169/60/000/009/003/007
A005/A001

3.5000

Translation from: Referativnyy zhurnal, Geofizika, 1960, No. 9, p. 164, # 11299

AUTHOR: Medzhitov, R.M.

TITLE: Application of the Richardson Criterion to Forecast of Aircraft Bumping

PERIODICAL: Sb. rabot Minskoy gidrometeorol. observ., 1959, No. 2, pp. 23-27

TEXT: The diagnosis and prognosis of bumping were checked on the base of aircraft and radiosound observations carried out during the same periods (the difference in time was not more than one hour). The checking was made by means of the Richardson number. The corrections of the prognoses of bumping existence turned out to be 54% for the critic Ri-number, that of bumping absence was equal to 78%. The total correctness of the prognoses was equal to 74%. The bumping prognosis of ЛИ-2 (LI-2)-aircraft was presented also for other values of the Ri-number.

M.V. Zavarina

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

SOV/50-59-6-5/17

3(7)
AUTHOR: Medzhitov, R. M.

TITLE: On the Forecast of Night-frosts (K prognozu zamorozkov)

PERIODICAL: Meteorologiya i gidrologiya, 1959, Nr 6, pp 25 - 28 (USSR)

ABSTRACT: The method of M. Ye. Berlyand (Refs 1,2) is at the moment the most promising and physically founded method of night-frost forecasting. It is, however, too complicated and requires comprehensive calculations. On the other hand, practical experience gained in Belorussiya shows that the empirical formulas obtained on the basis of own observations of the hydrometeorological- and agrometeorological stations, yield completely satisfactory results of night-frost forecasts. Calculations by means of these formulas are simple and practically possible for every observer. These empirical formulas for the group of stations in Belorussiya were obtained in 1954 on the basis of the correlation-dependence of the minimum air temperature T upon the temperature T_{13} and the relative moisture U_{13} of the air at one p.m. (according to the obser-

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vations made in 1947-1953). They read as follows: $T = a T_{13} + b U_{13} + c$. These formulas give the total effect of all local factors influencing the lowest temperature and permit to forecast the lowest temperature with sufficient accuracy and earliness on days with radiation conditions of the weather (radiation frosts), in case the forecast was made according to the observation data of one p.m. It is possible to show the relation between T, T_{13} and U_{13} for every station in form of a diagram. Figure 1 gives such a diagram. For the checking of the correctness of the night-frost forecasts by means of the empirical formulas according to the data by nine meteorological stations, 1575 forecasts of the years 1954-1956 were selected, i.e. all days from May until September when at one and seven a.m. and seven p.m. clouds were below eight balls and the wind velocity amounted to 6 m/sec. Simultaneously forecasts were made of the lowest air temperature and the lowest temperature at the surface of ground according to the formulas (1) and (2) of Berlyand (Ref 4, p 9) for the same days according to observations made at

7 p.m. The following results were obtained in these investigations: the method of Berlyand yields relatively better results for a plain open region if evening clouds and wind are preserved during the night, i.e. if night-frosts are more scarce. If, however, night-frosts occur more frequently, the temperature drops in reality lower than the value forecast by the Berlyand method. Moreover, it is also possible that this difference increases even more under the influence of the soil-topographic conditions of the terrain, which is not taken into account in the method by Berlyand. The characteristics and coefficients in the formulas (1) and (2) which take into account the dependence of cooling down during the night, upon the initial temperature distribution according to the vertical line, act also only in one direction, i.e. they exceed the forecast temperature. The method of Berlyand requires improvement and detailed rendering. If, however, the empirical points are used instead of the points for which they were derived, fully satisfactory forecasts result. The empirical formulae prove to be of advantage mainly at the most frost-bitten points. There are 2 figures and 4 Soviet references.

MEDZHITOV, R.M. [Madzhytau, R.M.]

Depth of frozen soil in the White Russian S.S.R. (for purposes of construction). Vestsi AN BSSR. Ser.fiz.-tekh.nav. no.2:124-129 '60. (MIRA 13:10)

(White Russia--Frozen ground)

L 24664-65 EWT(1)/FCC GW
ACCESSION NR: AT4049314 S/2546/64/000/136/0101/0115

7
6
B+1

AUTHOR: Medzhitov, R. M.

TITLE: Microstructure of clouds and aircraft icing over Belorussia

SOURCE: Moscow. Tsentral'ny*y institut prognozov. Trudy*, no. 136, 1964. Voprosy* obrazovaniya i prognoza oblakov i tumanov (Problems in the formation and forecasting of clouds and fogs), 101-115

TOPIC TAGS: cloud microstructure, aircraft icing, icing zone, cloud phase structure

ABSTRACT: The microstructure of clouds is examined in relation to icing of IL-2 aircraft in the lower 7-km layer of the troposphere on the basis of vertical sounding in the Minsk area over a 10-year period (1952-1961). Parameters taken into account were: height of the upper and lower boundaries of the clouds, aircraft icing, precipitation, pressure, temperature, and humidity of the air. A special template contoured to fit the IL-2

sure, temperature, and humidity of the air. A special template contoured to fit the IL-2 wing was used to observe icing. It was found that the probability of icing in various synoptic situations depended on the cloud types that formed. Therefore, two categories of clouds were distinguished: those with a low probability of icing (As, Ns-As, and Ns clouds) and those with a high probability (Ns-Sc, Ac, St, Sc, Cu, and Cb clouds). Three phase structures of clouds were also distinguished: droplet, crystalline, and mixed, and icing was

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L 24664-65
ACCESSION NR: AT4049314

found to be very rare in crystalline types. The thickness of icing zones for various cloud types is given in tabuler form, and the rate of icing (mm/min) is cited for each cloud type, the highest rate being in St-Sc and Cb clouds (0.95 and 0.97) and the lowest in Ns-As clouds (0.65). Orig. art. has: 10 tables and 5 figures.

ASSOCIATION: Tsentral'ny*y institut prognozov, Moscow (Central Institute of Forecasts)

SUBMITTED: 00 ENCL: 00 SUB CODE: ES

NO REF SOV: 008 OTHER: 000

Card 2/2

MEDZHITOV, R.M.

Microstructure of clouds and the icing of airplanes over white Russia. Trudy TsIP no.136:101-115 '64.

(MIRA 17:11)

KORSHAKOVA, A.S.; BOLDYREV, T.Ye.; ALEKSANYAN, A.B.; SHATROV, I.I.; LEYTMAN, L.V.; FROLOV, V.I.; SEMINA, N.A.; DEVOYNO, L.V.; SIZINTSEVA, V.P.; BATURINA, L.M.; ABAKAROV, U.A.; GRINAVTSEVA, V.P.; MEDZHIDOV, V.; KORSHUNOVA, N.A.

Studies on the reactogenic properties of Gamaleia IEM polyvaccine. Zhur.mikrobiol.,epid.i immun. 30 no.11:37-41 N '59. (MIRA 13:3)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR.
(DYSENTERY BACILLARY immunol.)
(TYPHOID immunol.)
(PARATYPHOID FEVERS immunol.)
(TETANUS immunol.)
(VACCINATION)

USSR/Human and Animal Physiology. Blood Circulation. General Problems. T

Abs Jour: Ref Zhur-Biol., No 20, 1958, 93181.

Author : Mustafayev, M.G., Medzhidova, A.G.
Inst :
Title : Influence of Blood Sugar Level on Reflexes from the Aortic Arc.

Orig Pub: Azerb. tibb. zh., 1957, No 6, 29-31 (azerb.), 84-86 (russk.)

Abstract: Cats in a state of light urethan anesthesia were injected intravenously with a 40% solution of glucose (1/G/kg) or insulin (30 i.u.). Excitability of the interoceptors of the aortic zone, a sign of which was the duration of the depressor reflex, i.e., the period of establishment of a minimal blood pressure

Card : 1/2

MEDZHID-ZADE, A. P., starshiy inzhener.

Combating accidents occurring while working with the LAkovlev apparatus. Neftianik 2 no.1:24-25 Ja '57. (MLRA 10:2)

1. TSekh kapital'nogo remonta skvazhin Neftepromyslovogo upravleniya Kirovneft'.
(Oil wells--Equipment and supplies--Repairing)

[redacted], Aslan P.

Universal [illegible]-well bleeder. Neftianik 2 no.7:22-2[illegible] (MIRA 10:8)

1.Starshiy inzhener upravleniya Azneftneft'.
(Oil wells--Equipment and supplies)